

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/024,632A
Source: 1Fu16
Date Processed by STIC: 10/2/06

ENTERED



IFW16

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/024,632A

DATE: 10/02/2006
TIME: 14:03:10

Input Set : A:\16517327.APP
Output Set: N:\CRF4\10022006\J024632A.raw

3 <110> APPLICANT: HE, STEVE S.
4 DOTSON, STANTON B.
6 <120> TITLE OF INVENTION: NUCLEIC ACID MOLECULES ASSOCIATED WITH PLANT CELL
7 PROLIFERATION AND GROWTH AND USES THEREOF
9 <130> FILE REFERENCE: 16517.327
11 <140> CURRENT APPLICATION NUMBER: 10/024,632A
12 <141> CURRENT FILING DATE: 2001-12-19
14 <150> PRIOR APPLICATION NUMBER: 60/257,896
15 <151> PRIOR FILING DATE: 2000-12-21
17 <160> NUMBER OF SEQ ID NOS: 42
19 <170> SOFTWARE: PatentIn Ver. 3.3
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 2344
23 <212> TYPE: DNA
24 <213> ORGANISM: Glycine max
26 <220> FEATURE:
27 <221> NAME/KEY: CDS
28 <222> LOCATION: (242)..(2233)
30 <400> SEQUENCE: 1
31 tgtgtgttga gcacatagaa cgatgagttt gttggtaga ggagcaagt ttgcattgt 60
33 gttgttagcaa tagcaacaca acacaacaaa acaaaaacca agtcttcatc atcttcata 120
35 gcagagatta acatgatgat tagtttattt gccaaagcaat gccttccttc gtgagatata 180
37 aactgcttagc aatttcaaattt ctttcgagt aaccaaaaag aaaaaaacaa aaagcaagaa 240
39 g atg aag cgc ata aat gag agt aac aac acc gat gat gga aac aat cat 289
40 Met Lys Arg Ile Asn Glu Ser Asn Asn Thr Asp Asp Gly Asn Asn His
41 1 5 10 15
43 aac tgg ttg ggg ttc tct ctc tca ccc cac atg aaa atg gag gct act 337
44 Asn Trp Leu Gly Phe Ser Leu Ser Pro His Met Lys Met Glu Ala Thr
45 20 25 30
47 tca gca gcc act gtt ccg aca acc ttc tac atg tcc cct tct caa tct 385
48 Ser Ala Ala Thr Val Pro Thr Phe Tyr Met Ser Pro Ser Gln Ser
49 35 40 45
51 cac ttg tcc aac ttc gga atg tgt tac ggt gtc gga gaa aat ggt aac 433
52 His Leu Ser Asn Phe Gly Met Cys Tyr Gly Val Gly Glu Asn Gly Asn
53 50 55 60
55 ttc cat tct cca ctt acg gtt atg cct ctc aag tct gat ggg tca ctt 481
56 Phe His Ser Pro Leu Thr Val Met Pro Leu Lys Ser Asp Gly Ser Leu
57 65 70 75 80
59 tgt atc ttg gaa gct ctc aaa aga tca caa acg caa gtg atg gtg cca 529
60 Cys Ile Leu Glu Ala Leu Lys Arg Ser Gln Thr Gln Val Met Val Pro
61 85 90 95
63 act tcg tct ccg aaa ttg gag gac ttt cta ggt ggt gca act atg gga 577
64 Thr Ser Ser Pro Lys Leu Glu Asp Phe Leu Gly Ala Thr Met Gly

See p/b

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/024,632A

DATE: 10/02/2006
TIME: 14:03:10

Input Set : A:\16517327.APP
Output Set: N:\CRF4\10022006\J024632A.raw

65	100	105	110	
67	act cac gaa tat gga agc cac gag aga ggt ttg agc cta gac agc atc			625
68	Thr His Glu Tyr Gly Ser His Glu Arg Gly Leu Ser Leu Asp Ser Ile			
69	115	120	125	
71	tat tat aac tcc caa aac gca gag gct caa ccc aac aga gac ctt ctt			673
72	Tyr Tyr Asn Ser Gln Asn Ala Glu Ala Gln Pro Asn Arg Asp Leu Leu			
73	130	135	140	
75	tca caa ccc ttc agg caa caa ggt cat atg agt gtc caa aca cac cct			721
76	Ser Gln Pro Phe Arg Gln Gln Gly His Met Ser Val Gln Thr His Pro			
77	145	150	155	160
79	tat tac tca ggc ctt gct tgc cat ggt tta tat caa gca ccg ttg gag			769
80	Tyr Tyr Ser Gly Leu Ala Cys His Gly Leu Tyr Gln Ala Pro Leu Glu			
81	165	170	175	
83	gaa gaa aca aca aag gaa acg cac gtg tcg gat tgc agc tcc cta atg			817
84	Glu Glu Thr Thr Lys Glu Thr His Val Ser Asp Cys Ser Ser Leu Met			
85	180	185	190	
87	cct caa atg aca gaa ggc ttg aaa aac tgg gtg gct cca aca agg gag			865
88	Pro Gln Met Thr Glu Gly Leu Lys Asn Trp Val Ala Pro Thr Arg Glu			
89	195	200	205	
91	ttt tca act cac cag cag gtt ttg gag cag caa atg aat tgt ggc atg			913
92	Phe Ser Thr His Gln Gln Val Leu Glu Gln Gln Met Asn Cys Gly Met			
93	210	215	220	
95	ggg aat gag aga aat ggt gtg tct tta gga tct gtg ggg tgt gga gag			961
96	Gly Asn Glu Arg Asn Gly Val Ser Leu Gly Ser Val Gly Cys Gly Glu			
97	225	230	235	240
99	tta cag tct cta agc tta tct atg agt cct ggt tct cag tct agt tgt			1009
100	Leu Gln Ser Leu Ser Met Ser Pro Gly Ser Gln Ser Ser Cys			
101	245	250	255	
103	gtc act gct cct tct gga aca gat tct gtt gct gtg gat gca aag aag			1057
104	Val Thr Ala Pro Ser Gly Thr Asp Ser Val Ala Val Asp Ala Lys Lys			
105	260	265	270	
107	aga ggg cat gct aaa ctt ggt cag aag cag cct gtg cat aga aaa tct			1105
108	Arg Gly His Ala Lys Leu Gly Gln Lys Gln Pro Val His Arg Lys Ser			
109	275	280	285	
111	atc gac aca ttt ggg caa aga acc tcg cag tat aga ggt gtc aca agg			1153
112	Ile Asp Thr Phe Gly Gln Arg Thr Ser Gln Tyr Arg Gly Val Thr Arg			
113	290	295	300	
115	cat aga tgg act ggt agg tat gaa gcg cat ttg tgg gat aat agt tgc			1201
116	His Arg Trp Thr Gly Arg Tyr Glu Ala His Leu Trp Asp Asn Ser Cys			
117	305	310	315	320
119	aag aag gaa ggg caa act agg aaa gga cga caa gtg tat ttg ggg ggt			1249
120	Lys Lys Glu Gly Gln Thr Arg Lys Gly Arg Gln Val Tyr Leu Gly Gly			
121	325	330	335	
123	tat gat atg gag gag aaa gct gca aga gcc tat gat ctc gcg gcc ctt			1297
124	Tyr Asp Met Glu Glu Lys Ala Ala Arg Ala Tyr Asp Leu Ala Ala Leu			
125	340	345	350	
127	aag tac tgg gga cct tca acg cat ata aac ttt tcg ata gag aat tac			1345
128	Lys Tyr Trp Gly Pro Ser Thr His Ile Asn Phe Ser Ile Glu Asn Tyr			
129	355	360	365	

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/024,632A

DATE: 10/02/2006
TIME: 14:03:10

Input Set : A:\16517327.APP
Output Set: N:\CRF4\10022006\J024632A.raw

131	caa	gtt	caa	ctt	gag	gaa	atg	aag	aac	atg	agc	aga	cag	gaa	tac	gtt		1393
132	Gln	Val	Gln	Leu	Glu	Glu	Met	Lys	Asn	Met	Ser	Arg	Gln	Glu	Tyr	Val		
133	370			375						380								
135	gca	cac	ttg	aga	aga	aaa	agc	agc	ggg	ttt	tct	aga	ggt	gct	tca	ata		1441
136	Ala	His	Leu	Arg	Arg	Lys	Ser	Ser	Gly	Phe	Ser	Arg	Gly	Ala	Ser	Ile		
137	385			390						395							400	
139	tac	aga	ggg	gtc	aca	agg	cat	cac	caa	cat	gga	aga	tgg	caa	gcg	agg		1489
140	Tyr	Arg	Gly	Val	Thr	Arg	His	His	Gln	His	Gly	Arg	Trp	Gln	Ala	Arg		
141				405						410							415	
143	ata	ggc	aga	gtt	gct	ggg	aac	aaa	gac	ctt	tac	ctt	ggg	acg	ttc	agc		1537
144	Ile	Gly	Arg	Val	Ala	Gly	Asn	Lys	Asp	Leu	Tyr	Leu	Gly	Thr	Phe	Ser		
145				420						425							430	
147	acc	caa	gag	gaa	gca	gca	gaa	gca	tac	gat	gta	gcg	gcg	atc	aaa	ttt		1585
148	Thr	Gln	Glu	Glu	Ala	Ala	Glu	Ala	Tyr	Asp	Val	Ala	Ala	Ile	Lys	Phe		
149				435						440							445	
151	cgc	ggc	gca	aat	gca	gtc	aca	aac	ttt	gac	att	tca	aga	tac	gat	gtg		1633
152	Arg	Gly	Ala	Asn	Ala	Val	Thr	Asn	Phe	Asp	Ile	Ser	Arg	Tyr	Asp	Val		
153				450						455							460	
155	gag	aga	atc	atg	gcc	agt	agc	aat	cgt	ctc	gct	ggg	gag	ctt	gca	agg		1681
156	Glu	Arg	Ile	Met	Ala	Ser	Ser	Asn	Leu	Leu	Ala	Gly	Glu	Leu	Ala	Arg		
157	465				470						475						480	
159	cgt	aag	aaa	gat	aac	gat	cct	aga	aac	aag	gac	ata	gac	tac	aac	aag		1729
160	Arg	Lys	Lys	Asp	Asn	Asp	Pro	Arg	Asn	Lys	Asp	Ile	Asp	Tyr	Asn	Lys		
161					485						490						495	
163	agt	gta	gta	aca	agt	gtg	aac	aat	gag	gaa	acg	gtt	caa	gtt	caa	gca		1777
164	Ser	Val	Val	Thr	Ser	Val	Asn	Asn	Glu	Glu	Thr	Val	Gln	Val	Gln	Ala		
165					500					505							510	
167	gga	aac	aac	aat	aat	gaa	aac	gac	tca	gag	tgg	aag	atg	gtt	tta	ttt		1825
168	Gly	Asn	Asn	Asn	Glu	Asn	Asp	Ser	Glu	Trp	Lys	Met	Val	Leu	Phe			
169					515					520							525	
171	aac	cac	cct	tca	cag	cag	caa	cag	gca	aat	ggc	aat	ggc	agt	gac	caa		1873
172	Asn	His	Pro	Ser	Gln	Gln	Gln	Gln	Ala	Asn	Gly	Asn	Gly	Ser	Asp	Gln		
173					530					535							540	
175	aaa	ata	atg	aac	tgt	gga	aat	tac	aga	aac	agt	gca	ttt	tct	atg	gcc		1921
176	Lys	Ile	Met	Asn	Cys	Gly	Asn	Tyr	Arg	Asn	Ser	Ala	Phe	Ser	Met	Ala		
177	545					550						555					560	
179	cta	caa	gat	ctt	att	ggg	att	gat	tgc	gtg	ggt	tct	ggg	cag	cat	aat		1969
180	Leu	Gln	Asp	Leu	Ile	Gly	Ile	Asp	Ser	Val	Gly	Ser	Gly	Gln	His	Asn		
181					565					570							575	
183	atg	ctg	gac	gag	tct	agc	aaa	att	ggg	act	cat	ttt	tca	aac	acg	tca		2017
184	Met	Leu	Asp	Glu	Ser	Ser	Lys	Ile	Gly	Thr	His	Phe	Ser	Asn	Thr	Ser		
185					580					585							590	
187	tcg	ctg	gtc	aca	agt	tta	agc	agc	tca	aga	gag	gct	agt	cct	gag	aaa		2065
188	Ser	Leu	Val	Thr	Ser	Leu	Ser	Ser	Arg	Glu	Ala	Ser	Pro	Glu	Lys			
189					595					600							605	
191	agg	ggt	ccc	tgc	ctt	ctg	ttc	cca	atg	cct	cca	atg	gaa	aca	aag	att		2113
192	Arg	Gly	Pro	Ser	Leu	Leu	Phe	Pro	Met	Pro	Pro	Met	Glu	Thr	Lys	Ile		
193					610					615							620	
195	gtg	aac	ccc	att	ggt	acc	agt	gtt	acc	tct	tgg	cta	ccc	tca	cca	acg		2161

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/024,632A

DATE: 10/02/2006
TIME: 14:03:10

Input Set : A:\16517327.APP
Output Set: N:\CRF4\10022006\J024632A.raw

```

196 Val Asn Pro Ile Gly Thr Ser Val Thr Ser Trp Leu Pro Ser Pro Thr
197 625          630          635          640
199 gtt caa atg agg cct tct cct gct atc tct ttg tct cac ttg cca gtt  2209
200 Val Gln Met Arg Pro Ser Pro Ala Ile Ser Leu Ser His Leu Pro Val
201          645          650          655
203 ttt gct tct tgg act gat act taa atggagatag gcacggcca ttttcatgt  2263
204 Phe Ala Ser Trp Thr Asp Thr
205          660
207 tatgttatgt aactaaaatt tacttttcc cttcatctt tatttctaatt ttgatttcct 2323
209 aagttaaaa aaaaaaaaaa a  2344
212 <210> SEQ ID NO: 2
213 <211> LENGTH: 663
214 <212> TYPE: PRT
215 <213> ORGANISM: Glycine max
217 <400> SEQUENCE: 2
218 Met Lys Arg Ile Asn Glu Ser Asn Asn Thr Asp Asp Gly Asn Asn His
219   1          5          10          15
221 Asn Trp Leu Gly Phe Ser Leu Ser Pro His Met Lys Met Glu Ala Thr
222          20          25          30
224 Ser Ala Ala Thr Val Pro Thr Thr Phe Tyr Met Ser Pro Ser Gln Ser
225          35          40          45
227 His Leu Ser Asn Phe Gly Met Cys Tyr Gly Val Gly Glu Asn Gly Asn
228          50          55          60
230 Phe His Ser Pro Leu Thr Val Met Pro Leu Lys Ser Asp Gly Ser Leu
231          65          70          75          80
233 Cys Ile Leu Glu Ala Leu Lys Arg Ser Gln Thr Gln Val Met Val Pro
234          85          90          95
236 Thr Ser Ser Pro Lys Leu Glu Asp Phe Leu Gly Gly Ala Thr Met Gly
237          100         105         110
239 Thr His Glu Tyr Gly Ser His Glu Arg Gly Leu Ser Leu Asp Ser Ile
240          115         120         125
242 Tyr Tyr Asn Ser Gln Asn Ala Glu Ala Gln Pro Asn Arg Asp Leu Leu
243          130         135         140
245 Ser Gln Pro Phe Arg Gln Gln Gly His Met Ser Val Gln Thr His Pro
246          145         150         155         160
248 Tyr Tyr Ser Gly Leu Ala Cys His Gly Leu Tyr Gln Ala Pro Leu Glu
249          165         170         175
251 Glu Glu Thr Thr Lys Glu Thr His Val Ser Asp Cys Ser Ser Leu Met
252          180         185         190
254 Pro Gln Met Thr Glu Gly Leu Lys Asn Trp Val Ala Pro Thr Arg Glu
255          195         200         205
257 Phe Ser Thr His Gln Gln Val Leu Glu Gln Gln Met Asn Cys Gly Met
258          210         215         220
260 Gly Asn Glu Arg Asn Gly Val Ser Leu Gly Ser Val Gly Cys Gly Glu
261          225         230         235         240
263 Leu Gln Ser Leu Ser Leu Ser Met Ser Pro Gly Ser Gln Ser Ser Cys
264          245         250         255
266 Val Thr Ala Pro Ser Gly Thr Asp Ser Val Ala Val Asp Ala Lys Lys
267          260         265         270

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/024,632A

DATE: 10/02/2006

TIME: 14:03:10

Input Set : A:\16517327.APP

Output Set: N:\CRF4\10022006\J024632A.raw

269 Arg Gly His Ala Lys Leu Gly Gln Lys Gln Pro Val His Arg Lys Ser
 270 275 280 285
 272 Ile Asp Thr Phe Gly Gln Arg Thr Ser Gln Tyr Arg Gly Val Thr Arg
 273 290 295 300
 275 His Arg Trp Thr Gly Arg Tyr Glu Ala His Leu Trp Asp Asn Ser Cys
 276 305 310 315 320
 278 Lys Lys Glu Gly Gln Thr Arg Lys Gly Arg Gln Val Tyr Leu Gly Gly
 279 325 330 335
 281 Tyr Asp Met Glu Glu Lys Ala Ala Arg Ala Tyr Asp Leu Ala Ala Leu
 282 340 345 350
 284 Lys Tyr Trp Gly Pro Ser Thr His Ile Asn Phe Ser Ile Glu Asn Tyr
 285 355 360 365
 287 Gln Val Gln Leu Glu Glu Met Lys Asn Met Ser Arg Gln Glu Tyr Val
 288 370 375 380
 290 Ala His Leu Arg Arg Lys Ser Ser Gly Phe Ser Arg Gly Ala Ser Ile
 291 385 390 395 400
 293 Tyr Arg Gly Val Thr Arg His His Gln His Gly Arg Trp Gln Ala Arg
 294 405 410 415
 296 Ile Gly Arg Val Ala Gly Asn Lys Asp Leu Tyr Leu Gly Thr Phe Ser
 297 420 425 430
 299 Thr Gln Glu Glu Ala Ala Glu Ala Tyr Asp Val Ala Ala Ile Lys Phe
 300 435 440 445
 302 Arg Gly Ala Asn Ala Val Thr Asn Phe Asp Ile Ser Arg Tyr Asp Val
 303 450 455 460
 305 Glu Arg Ile Met Ala Ser Ser Asn Leu Leu Ala Gly Glu Leu Ala Arg
 306 465 470 475 480
 308 Arg Lys Lys Asp Asn Asp Pro Arg Asn Lys Asp Ile Asp Tyr Asn Lys
 309 485 490 495
 311 Ser Val Val Thr Ser Val Asn Asn Glu Glu Thr Val Gln Val Gln Ala
 312 500 505 510
 314 Gly Asn Asn Asn Glu Asn Asp Ser Glu Trp Lys Met Val Leu Phe
 315 515 520 525
 317 Asn His Pro Ser Gln Gln Gln Ala Asn Gly Asn Gly Ser Asp Gln
 318 530 535 540
 320 Lys Ile Met Asn Cys Gly Asn Tyr Arg Asn Ser Ala Phe Ser Met Ala
 321 545 550 555 560
 323 Leu Gln Asp Leu Ile Gly Ile Asp Ser Val Gly Ser Gly Gln His Asn
 324 565 570 575
 326 Met Leu Asp Glu Ser Ser Lys Ile Gly Thr His Phe Ser Asn Thr Ser
 327 580 585 590
 329 Ser Leu Val Thr Ser Leu Ser Ser Arg Glu Ala Ser Pro Glu Lys
 330 595 600 605
 332 Arg Gly Pro Ser Leu Leu Phe Pro Met Pro Pro Met Glu Thr Lys Ile
 333 610 615 620
 335 Val Asn Pro Ile Gly Thr Ser Val Thr Ser Trp Leu Pro Ser Pro Thr
 336 625 630 635 640
 338 Val Gln Met Arg Pro Ser Pro Ala Ile Ser Leu Ser His Leu Pro Val
 339 645 650 655
 341 Phe Ala Ser Trp Thr Asp Thr

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 10/02/2006
PATENT APPLICATION: US/10/024,632A TIME: 14:03:11

FMS
Input Set : A:\16517327.APP
Output Set: N:\CRF4\10022006\J024632A.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:25; Xaa Pos. 1
Seq#:26; Xaa Pos. 1
Seq#:28; Xaa Pos. 4,7
Seq#:29; Xaa Pos. 4,7
Seq#:30; Xaa Pos. 4,7
Seq#:31; Xaa Pos. 3

VERIFICATION SUMMARY
PATENT APPLICATION: US/10/024,632A

DATE: 10/02/2006
TIME: 14:03:11

Input Set : A:\16517327.APP
Output Set: N:\CRF4\10022006\J024632A.raw

L:1808 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:0
L:1827 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:0
L:1865 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:0
L:1889 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29 after pos.:0
L:1913 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30 after pos.:0
L:1932 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31 after pos.:0